



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/759,853      | 01/15/2004  | Patrick E. Guire     | 9896.141.3.1        | 8747             |

22859 7590 05/15/2007  
INTELLECTUAL PROPERTY GROUP  
FREDRIKSON & BYRON, P.A.  
200 SOUTH SIXTH STREET  
SUITE 4000  
MINNEAPOLIS, MN 55402

|          |
|----------|
| EXAMINER |
|----------|

BOYKIN, TERRESSA M

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1711

|           |               |
|-----------|---------------|
| MAIL DATE | DELIVERY MODE |
|-----------|---------------|

05/15/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                |                              |  |
|------------------------------|--------------------------------|------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/759,853  | Applicant(s)<br>GUIRE ET AL. |  |
|                              | Examiner<br>Terressa M. Boykin | Art Unit<br>1711             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 16 March 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 29-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 29,32,34,43,45,46,48 and 49 is/are rejected.
- 7) ☒ Claim(s) 30,31,33,35-42,44,47 and 50 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

**Response to Arguments**

Applicant's arguments filed 3-16-07 have been fully considered and appreciated but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., paragraph 2 page 8 of applicants arguments) are not recited in the rejected claim(s). Note applicants arguments regarding the self-assembling monolayer although understood and appreciated are not present in the claims.

Namely:

As described at page 11, lines 8-13, a SAM is formed of molecules that spontaneous orient themselves with respect to a surface. "Self assembled" refers to the spontaneous orientation of **molecules** rather than layers. For example, the specification states that the composition is brought into sufficient proximity to a surface to permit the **molecules** to spontaneously orient themselves into substantially monolayer form upon the surface (pg. 11, lines 10-13). Likewise, at page 11 line 20 - page 12 line 2, it is described that "when a composition of SAM molecules in carrier solvent is brought into physical proximity with the surface, or interface, **the molecule domains spontaneously and preferentially orient themselves** toward either the solvent or surface/interface, in order to form a monolayer" (emphasis added). Thus, the self-assembling component of a SAM refers to the spontaneous (self) orientation (assembly) of **molecules**.

Art Unit: 1711

Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

### **Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 29,32,34,43,45,46,48, 49 are rejected under 35 U.S.C. 102(e) as being anticipated by

Applicants argue:

Zhong does not anticipate claims 29 or 46. “A claim is anticipated *only* if *each and every* element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference” *Verdegal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987) emphasis added.

which, not unlike applicant’s specification, is directed to a surface treatment or coating for a medical device

Contrary to applicants arguments, applicants claim do not in themselves limit the coating to a thin or ultra thin layer; even the term monolayer does not necessarily limit the thickness.

Art Unit: 1711

Note further that both the reference and the specification employ a hydrophilic surface (or substrate) coating to the same support (polyesters, polyurethanes, glass and metals).

Further, both the reference and applicants specification contain latent or (reactive groups upon or dissaffinitive or repellent groups) when activated or when coming in contact with a particular moiety (i.e. reference, bacteria) or nonspecific attraction.

With regard to the limitation of "photoreactive groups, which are covalently bound to each other or to the surface" note that - diazirines are mentioned in both applicants specification on page 21 and importantly in the reference in col. 7 line 57.

With regard to applicants claim 29 regarding a coated medical device comprising a medical device including one or more surfaces coating a coating formed from composition including self-assembling monolayer molecules covalently adjoined to one or more surfaces with one or more latent reactive groups., Note that the reference discloses a method of providing a self-assembling monolayer on a surface, the method comprising the steps of: a) providing on the surface both latent reactive groups and a monolayer formed of self-assembling monolayer molecules, and b) activating the latent reactive groups under conditions suitable to either covalently attach the self-assembled monolayer to the surface and/or to form a stable monolayer film on the surface, by initiating polymerization of suitable groups provided by self-assembling monolayer molecules themselves and/or by forming intermolecular bonds between the self-assembling monolayer molecules.

Note that the applicants recited "self assembling" is interpreted by the Examiner as a layer or coating that is chemically or physically adhered to another layer which itself aligns coats.

The Examiner interpretation of the recited "monolayer" while remaining within the scope of the specification as defined by applicants is " film or layer one molecule thick formed at the interface between water and either oil or air by a substance such as a partially esterified fatty acid that contains both hydrophobic and hydrophilic groups in the same molecule."

With regard to claims 32 wherein the surface is provided by a material selected from ceramics, metals and polymeric materials.

Art Unit: 1711

With regard to claim 34 wherein the material comprises a polymeric material selected from the group consisting of polystyrene, polycarbonate, polyester, polyethylene, polyethylene terephthalate (PET), polyglycolic acid (PGA), polyolefin, poly-(p-phenyleneterephthalamide), polyphosphazene, polypropylene, polytetrafluoroethylene, polyurethane, polyvinyl chloride, polyacrylate (including polymethacrylate), and silicone elastomers, as well as copolymers and combinations thereof.

With regard to claim 43 wherein the medical device is implanting the surface into a body to provide a passivating effect. Note the reference states

With regard to claim 46 wherein the coated medical device, note that

With regard to claims 45 and 48 wherein the monolayer forming molecule have themselves been provided with latent reactive groups note that the Examiner interpretation of the recited "latent" while remaining within the scope of the specification as defined by applicants is "present or potential but not evident or active".

With regard to claim 49 wherein the latent reactive groups comprise photoreactive aryl ketones attached to the hydrophilic domains.

The reference provides an implantable medical device having a **substrate** with a hydrophilic **coating** composition to limit in vivo colonization of bacteria and fungi. The hydrophilic **coating** composition includes a hydrophilic polymer with a molecular weight in the range from about 100,000 to about 15 million selected from copolymers acrylic acid, methacrylic acid, isocrotonic acid and combinations thereof.

The reference more specifically discloses a substrate, e.g. medical device such as angioplasty balloon, with lubricous, hydrophilic coating includes coating the substrate with a first aqueous coating composition comprising an aqueous dispersion or emulsion of first polymer having organic acid functional groups

Art Unit: 1711

and first polyfunctional crosslinking agent having functional groups capable of reacting with the organic acid groups, and drying the first coating composition to obtain a water-insoluble coating layer including functional groups reactive with organic acid groups; and contacting the dried coating layer with a second aqueous coating composition comprising an aqueous solution or dispersion of hydrophilic polymer having organic acid functional groups, second polymer having organic acid functional groups, and second polyfunctional crosslinking agent having functional groups capable of reacting with organic acid groups, and drying to effect covalent bonding of hydrophilic polymer and second polymer to the first polymer through the first or second crosslinking agent to form a hydrophilic coating. The first and second polymers may be the same or different. The first and second crosslinking agents may be the same or different.

The above may be used for providing a substrate, e.g. medical device such as angioplasty balloon (claimed), catheter, or guide wire, with hydrophilic coating which becomes lubricous when contacted with aqueous fluid, thus, making it possible to coat devices which are sensitive to high processing temperature such as polyethylene terephthalate balloon catheter.

In view of the above, the reference appears to anticipate that claimed invention with regard to 'each and every element'. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1711

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### **Correspondence**

**Please note that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site ([www.uspto.gov](http://www.uspto.gov)), from the Office of Public Records and from commercial sources. Applicants may be referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197.**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Terressa Boykin whose telephone number is 571 272-1069. The examiner can normally be reached on Monday through Friday from 6:30am to 3:00pm.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through



Art Unit: 1711

Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tmb



Examiner Terressa Boykin

**TERRESSA M. BOYKIN**  
**PRIMARY EXAMINER**